

D1 1 000 Air

D1 500 Air

D1 250 Air

D1 500

D1 250

User's Guide



Thank you for choosing Profoto

Thanks for showing us your confidence by investing in a D1 unit. For more than four decades we have sought the perfect light. What pushes us is our conviction that we can offer even yet better tools for the most demanding photographers.

Before our products are shipped we have them pass an extensive and strict testing program. We check that each individual product comply with specified performance, quality and safety. For this reason our flash equipment is widely used in rental studios and rental houses worldwide, from Paris, London, Milan, New York, Tokyo to Cape Town.

Some photographers can tell just from seeing a picture if Profoto equipment has been used

Professional photographers around the world have come to value Profoto's expertise in lighting and light-shaping. Our extensive range of Light Shaping Tools offers photographers unlimited possibilities for creating and adjusting their own light.

Every single reflector and accessory creates its special light and the unique Profoto focusing system offers you the possibility to create your own light with only a few different reflectors.

Enjoy your Profoto product!

Safety instructions



SAFETY PRECAUTIONS!

Read and follow all safety instructions below carefully to avoid injuries or damages! Make sure that Profoto Safety Instructions is always accompanied the equipment! Profoto products are intended for professional use! Generator, lamp heads and accessories are only intended for indoor photographic use. Do not place or use the equipment where it can be exposed to moisture, extreme electromagnetic fields or in areas with flammable gases or dust! Do not expose the equipment to dripping or splash! Do not place any objects filled with liquids on or near the equipment! Do not expose the equipment to hasty temperature changes in humid conditions as this could lead to condensation water in the unit. Do not connect this equipment to flash equipment from other brands. Do not use flash heads without supplied protective glass covers or protective grids. Glass covers shall be changed if it has become visibly damaged to such an extent that their effectiveness is impaired, for example by cracks or deep scratches. Lamps shall be changed if they are damaged or thermally deformed. When placing a lamp into the holder ensure not to touch the bulb with bare hands. Equipment must only be serviced, modified or repaired by authorized and competent service personnel!



WARNING – Electrical Shock – High Voltage!

Mains powered generator shall always be connected to grounded mains power supply outlet! Only use Profoto extension cables! Do not open or disassemble generator or lamp head! Equipment operates with high voltage. Generator capacitors are electrically charged for a considerable time after being turned off. Do not touch modeling lamp or flash tube when mounting umbrella metal shaft in its reflector hole. Disconnect lamp head cable between generator and lamp head when changing modeling lamp or flash tube!



Caution – Burn Hazard – Hot Parts!

Do not touch hot parts with bare fingers! Modeling lamps, flash tubes and certain metal parts emit strong heat when used! Do not point modeling lamps or flash tubes towards persons. All lamps may on rare occasions explode and throw out hot particles! Make sure that rated voltage for modeling lamp corresponds with technical data of user guide regarding power supply!

NOTICE – Equipment Overheating Risk

Remove transport cap from lamp head before use! Do not obstruct ventilation by placing filters, diffusing materials, etc. over inlets and outlets of the equipment ventilation or directly over glass cover modeling lamp or flash tube!



Final Disposal

Equipment contains electrical and electronic components that could be harmful to the environment. Equipment may be returned to Profoto distributors free of charge for recycling according to WEEE. Follow local legal requirements for separate disposal of waste, for instance WEEE directive for electrical and electronic equipment on the European market when product life has ended!

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System description

Profoto's 40 years of experience in developing state-of-the-art flash units is built into the design of the D1 units. The D1 family fully complies with the demand for durable, tough, fast and consistent flash units that professional photographers of today require.

The D1 unit is available in 250, 500 and 1000 Ws versions, all with integrated Profoto Air functionality. The 250 and 500Ws versions are also available without Profoto Air. The unit is fully digital, to ensure a consistency in flash-to-flash color temperature and flash energy. The dual mode SMPS (Switch Mode Power Supply) charging technology ensures the flash-to-flash precision. The 7 f-stop power range gives all the power the demanding photographer needs for creative freedom, to shoot with high speed and full open lens.

The built-in reflector gives you full control, minimal stray light and maximal light output. It is designed for use with soft boxes and umbrellas and for use with or without additional reflectors.

Short flash duration gives images a crisp feel and the fast recycling time means that you never have to wait for the flash. You will always get the image quality you want. All this in a package that offers 1/10 f-stop control, giving you the confidence that the images will be exactly as you want them.

As a professional photographer, you have your own special style and needs. Profoto's extensive Light Shaping Tools system fits perfectly with the D1, enabling you to shape the light your own way.

Profoto Air

Profoto Air is a system for convenient remote control of flash generators. The Profoto Air system is operating on one of eight selectable radio channels on the 2.4 GHz radio frequency band, for world wide use.

All Profoto flash generators with Profoto Air inside can be controlled via the Profoto Air system. Products with integrated Profoto Air functionality are marked with the Profoto Air symbol.



Profoto Air Remote

ProfotoAir Remote offers remote control of your D1Air units and synchronization of all your D1 units to your camera or in your hand. The device controls practically an infinite number of D1 units in up to six groups, either all at once in Master mode or in individual groups.

Profoto Air Sync

ProfotoAir Sync allows synchronization of practically an infinite number of D1 units with the same high performance as ProfotoAir Remote.

Profoto Air USB

The ProfotoAir USB device is a USB 2.0 transceiver which connects your D1Air unit to your PC or Mac via a wireless connection. ProfotoAir USB allows control of your light from as far away as 300 m/1000 ft (free line of sight).

Profoto Studio Air

Profoto StudioAir is a software solution for both PC and Mac which gives you full control of all your D1Air units from your computer. You can control each unit individually or group them to control multiple units at one time. You can save customer lighting setups for use at a later time.

Nomenclature



1. Display
2. On Button
3. Power Supply Indicator
4. Test Button
5. Ready Indicator
6. Channel Set Button
7. Setting Knob
8. SLAVE SETTING
- 8a. Slave Button
- 8b. RADIO Indicator
- 8c. IR Indicator

9. READY SETTING
- 9a. Ready Button
- 9b. BEEP Indicator
- 9c. DIM Indicator
10. MODEL SETTING
- 10a. Model Button
- 10b. PROP Indicator
- 10c. FREE Indicator
11. Model Set Button



12. Sync Connector

13. Power Supply (AC) Connector

14. Fuse Holder

15. Umbrella Tube
(on the upper side)

16. Locking Knob

17. Zoom Scale

18. Stand Adapter

Functionality

Power supply

The D1 unit can be connected to 100-120 VAC or 200-240 VAC, 50-60 Hz. The unit automatically senses and adapts to the supplied voltage and frequency. The power supply fuses must not be smaller than specified in the section *Technical data*.

Most gas generators with an output of 800W constant load, or more, can power the D1 unit. Thanks to the two stage SMPS (Switch Mode Power Supply) technology, no ProGas unit is needed.



WARNING:

Never use ordinary household extension cords to elongate the power cable. They may overheat. Always unwind cord reel extension winders fully before use. Contact your Profoto dealer for proper equipment.

Due to the two stage SMPS technology, the D1 could make a hearable sound during the recharge cycle. This is fully normal and could be seen as the sign of power being charged into the unit.

Energy control

The current energy level of the flash light is shown in the Display [1] in f-stop scale. The maximal energy (100%) is shown as 10.

The Setting Knob [7] is used to adjust the energy level, in 1/10 f-stop or 1 f-stop increments.

Modeling light

The Model Button [10a] is used to select one of three modeling light alternatives:

- PROP: The modeling light intensity is automatically adjusted to correspond to the energy level of the flash light.
- FREE: The modeling light intensity is manually set, free from any connection to the energy level of the flash light.
- OFF: No modeling light.

The Model Set Button [11] in combination with the Setting Knob [7] is used to change the level of the free modeling light.

Sync signaling

The D1 unit can be synchronized in different ways; via cable, via infrared (IR) light or via the ProfotoAir radio system.

- The 5 meter sync cable can without restrictions be elongated with a sync extension cable. The Profoto sync interconnection cord or so called “hard wiring” may be used.

- The built-in IR receiver senses the flash release as well as IR signals from most IR sync transmitters.
- The Profoto Air radio system is fully integrated in the D1 Air units, allowing radio synchronization via a ProfotoAir Remote or ProfotoAir Sync device connected to the camera, or via the ProfotoAir USB device connected to a computer with the Profoto Studio Airprogram.
- D1 units without integrated ProfotoAir functionality can be equipped with a ProfotoAir Remote or ProfotoAir Sync device acting as receiver, enabling radio synchronization via another ProfotoAir Remote or ProfotoAir Sync device connected to the camera.

Ready signaling

Ready signaling is used to indicate when the unit is fully charged. The Ready Button [9a] is used to select one of four ready signaling alternatives:

- BEEP: A clear “beep” will sound to indicate that the charging of the unit is completed. This setting also enables the control panel sounds, which indicates that a button is pressed or the Setting Knob is turned.
- DIM: The modeling light will be turned off when the unit is being charged and turned on again when the charging is completed. This setting also disables the control panel sounds.
- BEEP-DIM: The modeling light will be turned off when the unit is being charged, and turned on again when the charging is completed. A clear “beep” will also sound to indicate that the charging is completed. This setting also enables the control panel sounds.
- OFF: No ready signal. This setting also disables the control panel sounds.

Ready indicator/Test function

The Ready Indicator [5] is illuminated when the unit is fully charged and ready to flash.

The Test Button [4] is used to test that all light settings are correct and that the functionality is as expected. When the Test Button [4] is pressed, the unit will flash and the Ready Indicator [5] will be turned off while recharging. When the charging of the unit is completed, the Ready Indicator [5] will be illuminated again.

Flash before ready

The “Flash before ready” function makes it possible to flash before the charging of the unit is ready and fully completed. When a flash is released before the unit is 100% recharged, a long “beep” will sound, indicating an underexposed frame. Naturally the flash light may not correspond fully to the set value. The underexposure of the frame may be so small that it makes no significant difference, however it may be informative to get the feeling of the maximum repetition rate. The underexposed frame may still be usable if the catch of the moment was perfect.

Remote control

Wireless remote control is available for D1Air units, using the ProfotoAir Remote device or the ProfotoAir USB device in combination with the Profoto StudioAir software.

For more information about remote control, please refer to the Users Guides for Profoto Air Remote or ProfotoAir USB/Profoto StudioAir.

Color temperature

A frosted glass plate is included in the D1 delivery. It gives, in combination with the UV-coated flash tube, a recommended color temperature for daylight type film. Distinctive color temperature adjustments can be obtained by combining flash tubes and/or glass covers with different coatings.

Reflector

D1 is equipped with a built-in reflector, providing full control, minimal stray light and maximal light output. By mounting an external reflector and placing it in different positions, using the Zoom Scale [17], several light shapes can be created for each lighting purpose.

Umbrella

D1 is equipped with an umbrella tube that is suited for most umbrellas on the market. The diameter of the umbrella shaft must be between 7 mm and 8 mm. When an umbrella is used, it is not possible to mount an external reflector at the same time.

Operating instructions

Stand mounting

1. Mount and fasten the D1 unit on the stand using the locking knob on the Stand Adapter [18].
2. The unit can be directed upwards/downwards when the Locking Knob [16] is loosened. Fasten the Locking Knob [16] when the unit is correctly directed.

Mounting of external reflector

1. Unlock the dasp on the external reflector
2. Slide the reflector onto the D1 unit. Use the Zoom Scale [17] to place the reflector in the desired position.
3. Secure the reflector by locking the dasp.

Umbrella mounting

1. Slide the umbrella shaft into the Umbrella Tube [15] on the D1 unit.
2. After a few centimeters, there will be more friction. Continue to slide the umbrella shaft some more centimeters into the tube.

Glass cover mounting

1. Ensure that the D1 unit is turned off and that the power cable is not connected.
2. If the unit has been in use, wait five minutes to allow the unit to be fully discharged.
3. Gently remove the frosted glass plate.
4. Carefully fit the glass cover in place. Make sure that the safety pins fit properly into the slot of the glass cover

Power connection

1. Connect the power cable to the Power Supply (AC) Connector [13] on the D1 unit and to the mains power supply outlet.
2. The Power Supply Indicator [3] will be red, indicating that the unit is receiving power but is in standby mode.
3. Press the On Button [2].
4. The Power Supply Indicator [3] will now be green.

Energy level setting

1. Use the Setting Knob [7] to change the energy level of the flash light:

Turn the Setting Knob [7] clockwise to increase the energy level in 1/10 f-stop increments and counterclockwise to decrease.

Press and hold down the Setting Knob [7] and turn the knob clockwise to increase the energy in 1 f-stop increments and counterclockwise to decrease.

Modeling light setting

1. Use the Model Button [10a] to select the modeling light:
 - a. To select proportional modeling light, press and hold down the Model Button [10a] until the PROP Indicator [10b] is illuminated.
 - b. To select free modeling light, press and hold down the Model Button [10a] until the FREE Indicator [10c] is illuminated. The energy level of the last selected free modeling light setting will be activated.
 - c. To turn off the modeling light, press the Model Button [10a]. Both the PROP Indicator [10b] and the FREE Indicator [10c] will be turned off. Press the Model Button [10a] again to turn on the modeling light.

Change the level of the free modeling light:

1. Verify that free modeling light setting is selected (the FREE Indicator [10c] shall be illuminated when the modeling light is turned on).
2. Press the Model Set Button [1]. The Display [1] will start flashing, showing the current energy level of the free modeling light.
3. While the Display [1] is flashing, use the Setting Knob [7] to change the energy level:
 - a. Turn the Setting Knob [7] clockwise to increase the energy level in 1/10 f-stop increments and counter-clockwise to decrease.
 - b. Press and hold down the Setting Knob [7] and turn the knob clockwise to increase the energy in 1 f-stop increments and counter-clockwise to decrease.
4. Wait until the Display [1] stops flashing. (The Display [1] will now show the energy level of the flash light.)

Ready signaling setting

1. Use the Ready Button [9a] to select the ready signaling:
 - a. To select sound signaling, press and hold down the Ready Button [9a] until the BEEP Indicator [9b] is illuminated.
 - b. To select light signaling, press and hold down the Ready Button [9a] until the DIM Indicator [9c] is illuminated.
 - c. To select both sound and light signaling, press and hold down the Ready Button [9a] until both the BEEP Indicator [9b] and the DIM Indicator [9c] are illuminated.
 - d. To turn off the ready signaling, press the Ready Button [9a]. Both the BEEP Indicator [9b] and the DIM Indicator [9c] will be turned off. Press the Ready Button [9a] again to turn on the ready signaling.

Sync via cable

1. Connect a sync cord from the camera to the Sync Connector [12] on the D1 unit.

Sync via IR

1. Press and hold down the Slave Button [8a] until the IR Indicator [8c] is illuminated.

Sync via radio (D1 without Profoto Air)

1. Connect a ProfotoAir Remote or ProfotoAir Sync device (Receiver) with a cable to the Sync Connector [12] on the D1 unit.
2. Follow the instructions for generators *without* built-in Profoto Air receiver in the ProfotoAir Remote/ProfotoAir Sync Users Guide.

Sync via radio (D1 with Profoto Air)

1. Press and hold down the Slave Button [8a] until the RADIO Indicator [8b] is illuminated.
2. Select radio channel by following the *Radio settings* instructions below.
3. Connect a ProfotoAir Remote or ProfotoAir Sync device to the camera.
4. Follow the instructions for generators *with* built-in ProfotoAir receiver in the Profoto Air Remote/ProfotoAir Sync Users Guide.

Radio settings (D1 with Profoto Air)

For sync via radio, the same radio channel has to be set on the D1 unit and the Profoto device or the Profoto StudioAir program.

For remote control using ProfotoAir Remote, the same radio channel and group has to be set on the D1 unit and the ProfotoAir device.

For remote control using ProfotoAir USB and Profoto StudioAir, the same radio channel has to be set on the D1 unit and in the Profoto StudioAir program.

1. Verify that the RADIO Indicator [8b] is illuminated on the D1 unit.
2. Press the Channel Set Button [6]. The Display [1] will start flashing, showing the current radio channel number to the left and the radio group letter to the right.
3. While the Display [1] is flashing, turn the Setting Knob [7] clockwise to increase the radio channel number (1 to 8) and counter-clockwise to decrease the number.
4. While the Display [1] is flashing, press and hold down and turn the Setting Knob [7] clockwise to increase the group letter (A to F) and counter-clockwise to decrease the letter.
5. Wait until the Display [1] stops flashing. The Display [1] will now show the energy level of the flash light.)

For radio channel and group settings on the ProfotoAir devices and the Profoto StudioAir program, please refer to the corresponding Users' Guide.

Turn off unit

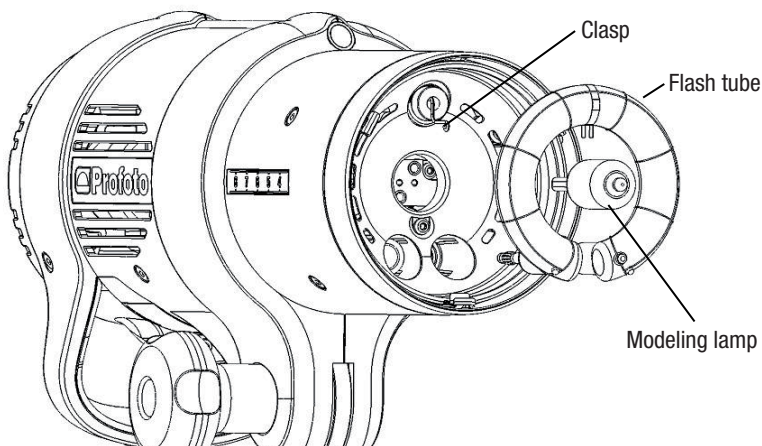
All settings will remain when the unit is in standby mode. If the power cable is removed, the modeling light will revert to the default settings; the modeling light will be turned off and the energy level of the free modeling light will be set to 10.

1. Press the On Button [2] to turn off the power.
2. The Power Supply Indicator [3] will be red, indicating that the unit is receiving power but is in standby mode.
3. Remove the power cable.

Maintenance

Changing flash tube and/or modeling lamp

1. Ensure that the D1 unit is turned off and the power cable is not connected.
2. If the unit has been in use wait five minutes to allow the unit to be fully discharged.
3. Gently remove the frosted glass plate.
4. Change the flash tube:
 - Unlock the flash tube trigger by unfolding the stainless steel ribbons around the clasp.
 - Grasp the flash tube in the bottom and pull it straight out of the socket.
 - When inserting the new flash tube, ensure that the trigger connection clasps properly around the flash tube.
 - Lock the flash tube trigger by folding the stainless steel ribbons around the clasp.
5. Change the modeling lamp:
 - Pull the lamp straight out of the socket.
 - Insert a new modeling lamp straight into the socket. Do not touch the lamp with bare hands.
6. Carefully fit the glass plate in place, with the frosted side inwards. Make sure that the safety pins fit properly around the glass plate.



Changing built-in fuse

1. Ensure that the D1 unit is turned off and that the power cable is not connected.
2. If the unit has been in use, wait five minutes to allow the unit to be fully discharged.
3. Pull out the Fuse Holder [14] from the unit and remove the old fuse.
4. Push the new fuse all the way into the Fuse Holder. Only use recommended fuses; see section *Technical data*.
5. Fit the Fuse Holder in place by gently pushing until the holder snaps in place.

Adaptive thermal control

The D1 unit is equipped with an adaptive thermal control system. If there is risk for overheating of the unit caused by abnormal external influence, the thermal control system will automatically protect the unit from damage. A microprocessor supervises and controls the unit, based on input from four thermal sensors. If the sensors report an increase in temperature, the microprocessor automatically takes measures to protect the unit. The first measure is to increase the fan speed. If the fan at full speed cannot bring the temperature down, the modeling light will automatically be turned off during recharging. Next step is to turn off the modeling light completely and at the same time slow down the recharging. Eventually the recharging will stop completely. After a while, when the temperature has decreased sufficiently, the unit will start recharging at a normal pace. This automatic protection will only interfere under extreme conditions, such as when the air vents are blocked.

Depending on version, the D1 unit is designed to withstand up to 1000 full power flashes during one hour. However, it is not recommended to run harder than necessary due to the lifetime of the flash tube.

If a defective flash head – for example with a broken or misfiring flash tube – is used, releasing the flash a long beep signal will indicate a malfunction/underexposure.

Notice:

The air vents of the unit must never be blocked or covered in any way. Never store your flash equipment in a car on a hot and sunny day. Never use a D1 unit that is placed inside a case or transport box. Avoid storing the unit close or below the freezing point. A cold unit may not work properly or may even brake and will lose capacity (flash output). There is also a risk of failure because of condensation when a cold generator is moved to a warmer surrounding. Do not expose any flash equipment to wet or humid environments or extreme electro-magnetic fields.

Technical data

D1 1000 Air

D1 500 Air

D1 250 Air

D1 500

D1 250

Specifications	D1 1000 Air	D1 500 Air D1 500	D1 250 Air D1 250
Energy (Ws/J)	1000	500	250
Power range f-stop	7	7	7
Ws	15.6-1000	7.8-500	3.9-250
Power range	1/1-1/64	1/1-1/64	1/1-1/64
Power increments	1/10	1/10	1/10
Flash duration t0.5	1/700-1/1800	1/1000-1/2600	1/1400-1/3700
Recycling 230V	0.2-2.0	0.2-0.95	0.2-0.65
Recycling 120V	0.2-2.0	0.2-0.95	0.2-0.65
Color temperature consistency, K	+/- 30	+/- 30	+/- 30
Color temperature, K	5600	5600	5600
Energy precision (flash-to-flash) f-stop	±0.05	±0.05	±0.05
Light spread with built-in reflector	77 degrees	77 degrees	77 degrees
Multi voltage	Yes	Yes	Yes
Power supply fuse,200-240VAC	6 amp	6 amp	6 amp
Power supply fuse,100-120VAC	10 amp	10 amp	10 amp
Built-in fuse	T10AH 5x20	T10AH 5x20	T10AH 5x20

Specifications	D1 1000 Air	D1 500 Air D1 500	D1 250 Air D1 250
Modeling lamp	120V, 300W	120V, 300W	120V, 300W
Modeling light function	Off, Prop, Free	Off, Prop, Free	Off, Prop, Free
Synchronization modes	Wire/IR/Air	Wire/IR/Air	Wire/IR/Air
Measurements			
Dimensions mm (length & diameter)	300 x 130 (170 including StandAdapter)		
Dimensions inch (length & diameter)	11.8 x 5.12 (6.69 including StandAdapter)		
Weight	2.94 kg/6.48 lbs	2,43 kg/5,36 lbs	2,23 kg/4,91 lbs

All data are to be considered as nominal and Profoto reserves the right make changes without further notice.

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Technical data and product information are subject to change without notice.

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